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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,745	11/14/2001	Gerald Chip	GT-5400	8255

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EXAMINER

BOYD, JENNIFER A

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,745

Applicant(s)

CHIP ET AL.

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed October 28, 2004, have been entered and have been carefully considered. In view of Applicant's arguments that the urea-formaldehyde is used as a cross-linking agent rather than an additional component in the latex binder system, the Examiner withdraws all previously set forth rejections as detailed in paragraph 3 of the previous Office Action dated October 5, 2004. Despite this advance, the invention as currently claimed is not found to be patentable for reasons herein below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 - 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It should be noted that the Applicant has not provided any chain length limitations to the urea-formaldehyde polymer (i.e. a normal urea-formaldehyde polymer compared to urea-formaldehyde polymer made by adding a shortstop agent), the amount of shortstop agent used in the system and the time at which the short stop agent is put into the urea-formaldehyde system. It is unclear how the Dynea urea-formaldehyde used in the present invention is structurally different than the other urea

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formaldehyde resin discussed in Table 1 resulting in superior high temperature resistance properties.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connor et al. (US 4,539,254).

O'Connor is directed to a reinforcing composite for roofing membranes and process for making such composites (Title).

As to claims 1 and 6, O'Connor teaches a composite comprising at least one layer of fiberglass, at least one layer of polyester and at least one third layer which is fiberglass or polyester (column 1, lines 59 – 64). It should be noted that that the layer of polyester can be equated to Applicant's "single layer of a nonwoven or woven polyester mat". O'Connor teaches that the layers may be bonded together by a thermoplastic adhesive under pressure to form a thin composite (column 2, lines 10 – 14). O'Connor teaches that the thermoplastic adhesive used to bind the laminated composite together can be a water-based adhesive capable of cross-linking (implying the need of a cross-linking material) to give a thermoset structure, may also be made by adding thermosetting resins to a thermoplastic resin (for example, by adding a urea-formaldehyde resin to a styrene-butadiene latex) (column 3, lines 55 – 68). As to the limitation

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that the urea-formaldehyde resin is “prepared by adding a short-stop agent to the urea-formaldehyde resin reaction system”, it should be noted that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or an obvious variant from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the Applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). It should be noted that the Applicant has not provided any chain length limitations to the polymer (i.e. a normal urea-formaldehyde polymer compared to urea-formaldehyde polymer made by adding a shortstop agent), the amount of shortstop agent used in the system and the time at which the short stop agent is put into the urea-formaldehyde system. It is the position of the Examiner that these factors would provide a comparative basis for the claimed invention and the prior art. The Examiner submits that a minor amount of shortstop agent could be added towards the polymerization process which would result in a minimal impact on the structural and physical characteristics of the polymer.

As to claims 1 – 10, O'Connor discloses the claimed invention except for that the binder comprises at least 10 – 90 wt% styrene-butadiene and a corresponding amount of 90 – 10 wt% of urea-formaldehyde resin as required by claims 1 and 6, about 70 wt% styrene-butadiene and about 30 wt% of urea-formaldehyde resin as required by claims 2 and 7, at least 10 – 90 wt% styrene and 90 – 10 wt% butadiene as required by claims 3 and 8, about 30 - 70 wt% styrene and

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about 70 – 30 wt% of styrene as required by claims 4 and 9 and about 40 wt% styrene and about 60 wt% of styrene as required by claims 5 and 10. It should be noted that the amount of styrene-butadiene and urea-formaldehyde resin present in the binder and the proportion of butadiene to styrene are result effective variables. For example, as the styrene content increases, the binder becomes stiffer and is more impact resistant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a binder with 10 – 90 wt% styrene-butadiene and a corresponding amount of 90 – 10 wt% of urea-formaldehyde resin as required by claims 1 and 6, about 70 wt% styrene-butadiene and about 30 wt% of urea-formaldehyde resin as required by claims 2 and 7, at least 10 – 90 wt% styrene and 90 – 10 wt% butadiene as required by claims 3 and 8, about 30 - 70 wt% styrene and about 70 – 30 wt% of styrene as required by claims 4 and 9 and about 40 wt% styrene and about 60 wt% of styrene as required by claims 5 and 10 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the ratio of styrene-butadiene and urea-formaldehyde and the ratio of styrene to butadiene to create a binder with proper tear strength and impact strength.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
January 5, 2005


TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700